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Anjan K. Majumder (208) 525-0206	Lockheed Idaho Technologies Co.	May , 1995

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HUMAN RADIATION EXPERIMENTS

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ITEMS OF INTEREST:

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George L. Voelz, M. D., Acting Director
Health Services Laboratory

May 24, 1967

Claude W. Sill, Chief, Analytical Chemistry
Branch, Health Services Laboratory

MONTHLY REPORT - ANALYTICAL CHEMISTRY BRANCH
APRIL 21, 1967 - MAY 21, 1967

HSL:KRP

ROUTINE

Biological Samples (urine, feces, etc.)	293
Water Samples (potable, effluent, etc.)	251
Air Dusts (carbon cartridges, filters)	433
Whole-Body Analyses	40

RESEARCH

Research was conducted on a long range tracer problem by investigating elements that can be activated in the MTR and can be used for practical purposes in our lab. A search was made for a filter media that can be used practically and can be irradiated without interference with the tracer element.

Research was continued on the development of a electrodeposition procedure. It was ascertained that oxalic acid can be used in the back extraction of Pu-239 from a quaternary amine and subsequently electrodeposited without a boil down step. However, uranium will not back extract under the same conditions.

The modification of the Rn 222 analytical apparatus was continued in order to handle collection of Rn from mylar bags. The apparatus was calibrated by filling a mylar bag with a known Rn 222 activity which was collected and analyzed 2-3/4 days later, with a yield of 99+%. Actual flow rates that were attained with the Sprayit paint pumps and the Whirlwind aquarium pump were measured. The large Sprayit pump is not satisfactory for sample collection but the aquarium pump will probably be satisfactory.

Research was conducted on the separation of niobium from zirconium.

The thyroid counter for dairy cattle was calibrated and research was conducted on cattle thyroid counting.

SPECIAL ACTIVITIES

The final draft has been written of a paper entitled "A New Horizontal Type Counter with Revolving Detectors for Whole-Body Counting by Rota-Scanning" by Jesse I. Anderson, DeRay Parker and Dale Olson.

The replacement for the Ge(Li) detector was received and checked out. A vault was fabricated for the detector, its resolution and linearity was checked and optimum operating conditions for routine use was established.

WHOLE-BODY COUNTING ACTIVITIES

Whole-body counts at the Health Services Laboratory were as follows: 16 routine, 11 termination and 13 others making a total of 40 whole-body counts.

cc: George L. Voelz, M.D.